

ABSTRACT OF THE DISCLOSURE

The invention relates to a process for the manufacture of a shaped part of ultra high molecular weight polyethylene (UHMWPE) comprising melt processing, wherein a) the UHMWPE has a weight average molecular weight (M_w) of at least $1 \cdot 10^6$ g/mol, b) during the shaping the storage plateau modulus of the UHMWPE (G^*) is kept at a value of at most 1.5 MPa, c) whereafter, before the cooling, the G^* is raised to its final value. The invention further relates to a shaped part obtainable with the process and the use of the shaped part in a medical application.